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FACTORS AFFECTING INNOVATIVE ECONOMIC DEVELOPMENT AT NATIONAL AND REGIONAL LEVELS

The article gives an overview of various factors affecting innovative economic growth both at national and regional levels. Special emphasis is made on the impact of human capital as crucial for innovative development and competitiveness. As an example the economic opportunities of the Gomel region are considered in the article.

В статье дается обзор различных факторов, влияющих на инновационный экономический рост на национальном и региональном уровнях. Особое внимание уделяется влиянию человеческого капитала как важнейшего фактора инновационного развития и конкурентоспособности. В качестве примера в статье рассматриваются экономические перспективы Гомельской области.

Key words: economic growth; physical capital; human capital; foreign investments; Economic Forum; competitive advantages.

Ключевые слова: экономический рост; физический капитал; человеческий капитал; иностранные инвестиции; экономический форум; конкурентные преимущества.

It is obvious that in the twenty-first century innovations have become fundamental basis of economic progress and assure positive socio-economic dynamics. The aim of the research is to analyze some different scientific views on “innovation” and determine which factors are most relevant to generate innovative economic growth both at national and regional levels.

National competitiveness is determined as a result of the country’s ability to innovate in order to achieve and preserve the advantageous position in comparison with other nations. Belarus has a significant scientific, research, innovative potential, efficient use of which will improve the competitiveness of the economy. The innovative development must be a key factor in the economic growth of the country including regions. The level of social and economic growth, the level of competitiveness and efficiency of the Belarusian regions development is different. It depends on those factors that are at the disposal of a particular region and their efficient use. Why do we need economic growth? What are the main factors that foster economic progress? What does innovation represent? Many researchers and economists tried to answer these questions.

Economic growth is considered as the main factor in the well-being and improves the leaving standards for many people. Economic growth is influenced by direct factors or supply determinants like human resources, natural resources, the increase in capital employed and technological advancements. Economic growth is also influenced by indirect factors such as institutions (financial institutions, educational institutions, public and private administrations etc.), the size of the aggregate demand, saving rates and investment rates, the efficiency of the financial system, budgetary and fiscal policies, migration of labour and capital and the efficiency of the government. But what determines the increase of each component is very different. Public expenditure, capital formation, private or public investment, exchange rates, employment rates, for example, have different impacts on economic advancement and it should be taken into account that these determinants have different implications if the states are developed or not. There are socio-political factors and events that have a major influence on the economic progress of a country.

There are also differences between economic and non-economic determinants. Economic determinants refer to factors like accumulation of capital, human capital and labour, technological progress and innovations. Non-economic sources refer to factors like government efficiency, institutions, political and administrative systems, cultural and social factors, geography and demography [1].

All these factors, economic and non-economic determinants, are interrelated. Highly developed countries have governments that focus on these areas. Less-developed countries, even those with high

amounts of natural resources, will lag behind when they fail to promote research in technology and improve the skills and education of their workers.

The concept of "innovation" often appears in the scientific literature, but still there is no common opinion on what in fact innovation represents. It is believed that the term "innovation" was first mentioned in scientific literature in the 30s of the twentieth century by scientists J. Schumpeter. Schumpeter argues that in a developing economy where an innovation prompts a new business to replace the old, booms and recessions are inevitable and cannot be removed or corrected without frustrating the creation of new wealth through innovation.

Joseph Schumpeter defines innovation as a process of transforming the new ideas, new knowledge into new products and services. This is an activity which leads to new producing function, new product. He divides this activity as follows:

– Introducing a new product: the entrepreneur should introduce a new product which can be easily sold and which is not offered in the market.

– Introducing a new method of production: innovation should offer a new scheme of production which through existing inputs can lead to an increased output, introduction of new inputs and change of existing ones.

– Opening new markets: innovations can increase the sell in new regions, and the number of customers.

– Finding of appropriate sources of raw materials: the entrepreneur should find an appropriate source of inputs, which are needed for production of new products.

– Establishing a new organization in the industry: the entrance of the entrepreneur in the market, where there has been no competition previously; or creating conditions through which the entrepreneur would take the monopoly position in the market.

It is important that Schumpeter introduced the idea of innovation as the driving force of economic development of a society, through which the economy can get away from their "usual and dramatically change the trajectory of their own performance". Scientific views of Schumpeter have become the theoretical basis for further study of the factors of economic growth which create national wealth [2].

According to the American scientist E. Mansfield, innovation – is the first time announced changes in technology. Technological changes mean changes in the production or release of new products. Such point of view is considered as not quite justified, because the new equipment and technology used in production may be changed and developed not only by revolutionary way but also by evolutionary way, i. e. through modernization and improvement [3].

P. Drucker has been called "the inventor of modern management". He believed in business as a human-driven enterprise that could be profitable and socially responsible. Some modern scientists believe that P. Drucker is the founder of the term "innovation". He explained innovation as a concept that is often used practically in all spheres of human activity. P. Drucker supposed innovation is rather social and economic concept than technical one [4].

As an example, the main factors affecting innovative economic growth in Gomel region are as follows:

– Quantity and availability of natural resources. The discovery of more natural resources, such as oil or mineral deposits, will encourage the economy by increasing a country's production capacity. The effectiveness at utilizing and exploiting its natural resources is a function of the skills of the labor force, type of technology and the availability of capital.

– Investment in physical capital. Improvements and increased investment in physical capital – such as machinery, roadways, and factories – will reduce the cost and increase the efficiency of economic output. Factories and equipment that are modern and well-maintained are more productive than physical labor. Higher productivity leads to increased output. Labor becomes more productive as the ratio of capital expenditures per worker increases. An improvement in labor productivity increases the growth rate of the economy.

– Improvements in technology. Improvements in technology have a high impact on economic growth. As the scientific community makes more discoveries, managers find ways to apply these innovations as more complex production techniques. The application of better technology means the same amount of labor will be more productive, and economic growth will advance at a lower cost.

– The impact of human resources. A skilled, well-trained workforce is more productive and will produce a high-quality output that adds efficiency to an economy. A shortage of skilled labor can discourage the economic growth. An unskilled workforce will drop behind an economy and possibly lead to higher unemployment.

According to the Gomel Economic Forum which has been held annually since 2004, the economic performance of the Gomel region has been growing recently. In 2018, the gross regional product per capita amounted to 8.6 thousand rubles (4.2 thousand US dollars). An important aspect of the region is the existing natural resources: oil, gas, rock salt, peat, brown coal, potassium salts, chalk, and building stone. The region puts a special emphasis on science development, boosting export potential, foodstuffs production and housing construction. The main types of economic activity are the production of petroleum, metallurgical industry, machinery and equipment, mining of energy minerals, chemical industry, processing industry and others. The region employs more than 220 large and medium-sized enterprises, employing about 130 thousand people.

Gomel economy is export-oriented. About 67% of all produce is supplied to markets in the near and far abroad. Traditionally key positions of exports are ferrous metals and their products, oil and products of its processing, machines, chemical products, and products of meat and dairy industry. Enterprises of the Gomel region cooperate with trade partners from more than 100 countries around the world. In 2018, the share of the countries of the Eurasian Economic Union accounted for 44%, the countries of the European Union – 32%.

Gomel region is an attractive for foreign investments as it has favorable geographical position, high scientific-industrial potential and well-developed agricultural industry. The region is interested in national as well as foreign investments. Foreign investments help to sustain the economic stir and improve living standards in the region as well as to maintain effective functioning of enterprises and internalization of the commodity market, capital and manpower. The main spheres most attractive for investment are the following industries: fuel, chemical, petrochemical industries, non-ferrous metallurgy, radio electronics, diamond processing, machinery, metalworking, woodworking, pulp and paper industry, food industry. The region agricultural production department welcomes international cooperation in production and processing of farm products. Construction enterprises are interested in the investments in production of construction materials. About 500 people from 28 countries took part in the 16th Gomel Economic Forum (24, May, 2019). The region economic and investment potential was presented and nine documents worth over $130 million were signed during the Forum.

The Science and Technology Park created in Gomel streamlines the development process of the real sector of the economy and applies the latest developments of both Belarusian and foreign scientists. Today 8 residents registered in Technopark are small businesses that are engaged in the development of advanced technologies for all sectors of the economy. The range of their activities is wide: design and maintenance of automated process control systems, development and manufacture of nanotechnological research equipment, software, mobile applications, energy saving technologies, logistics audit, etc.

The best innovative projects were named in Gomel. The city hosted a qualifying round of the "100 Ideas for Belarus" contest. More than 30 participants presented their projects: autonomous appliances and entire power generation stations, home acoustic fridge, manipulator arm, electronic flicker, and dormitory of the future. The presented ideas are applicable in energy, medicine, transport and urban infrastructure.

But one of the main problems of the Gomel regional innovation system is the lack of effective information interactions between its elements, informational non-transparency, low motivation to create and finance innovations, and the lack of mechanisms for the commercialization of business results. It is possible to create effective information channels between the participants of the innovation process only in the knowledge economy, using modern information technologies.

Special attention should be taken to the impact of human resources as crucial for ability to innovate and compete both at national and regional levels. Human capital is a critical input to production as well as innovation. Innovation raises the demand for high-skill workers and drives up their wages. Increase in the quantity and quality of the workforce increases rate of economic growth. Here, increase in quality refers to improvement of skills the workers possess. When more people work, more goods and services are produced and when more skilled workers do a job, they produce high value goods and services. There is a clear relation between a country's stock of human capital, usually measured by the educational achievements of its population, and per capita national income. The average citizen of a high income country is better educated than the average citizen of a low-income country. One interpretation of this is that educated citizens make a country rich. But another might be that rich countries spend more on education.

The main problems of non-providing workplaces with human resources are:

– low qualification of personnel with technical and engineering skills and specialties on the basis of technical and professional education;

– lack of knowledge of progressive advanced technologies;

– deficiency of scientific personnel on technical, engineering specialties and innovative management.

The problem of the staffing of the scientific, technical and innovative activity in the society determines the need for reorganization of the national education system, developing the intellectual and spiritual potential of the society.

Education of the Gomel region is the most important driver of innovation development of its economy. The educational system is aimed to improve the competitiveness of the specialists by developing skills of a wide range problem solving. The educational sector is presented by 7 higher education institutions, 22 vocational, technical schools, and colleges. Currently, the interaction of Belarusian universities and industrial enterprises requires much deeper integration in the area of human resource development.

One of competitive advantages and factors of quality improvement of specialists at Belarusian Trade and Economics University of Consumer Cooperatives is integration of secondary vocational and higher education. The University has created a continuous system of education for the development of creative and talented personality: higher education – Masters – Postgraduate – research and teaching activities – Doctorate. The University builds relationship with establishments of secondary vocational education on the basis of agreements on continuous training of specialist. The educational programs of Postgraduate courses and retraining of high-level personnel and specialists having higher education are implemented at the University. The educational programs of retraining of high-level personnel and specialists having secondary vocational education are also offered at the University.

As for the participation of the University in the development of entrepreneurship, as well as the involvement of young minds in this process, the International Championship of StartUp-projects "Youth and Entrepreneurship" is held on the basis of the University. Young people from 15 to 35 years old are invited to participate: beginners and active entrepreneurs, students, undergraduates, graduate students, students of colleges, schools, and other youth teams from near and far abroad countries. The Championship is an international program that gives student teams the opportunity to come up with interesting projects in various fields, to attract the attention of investors to their ideas and show themselves to potential employers.

Primary innovative elements in the process of education should be introduced in the school-based career guidance. Undergraduate education should stimulate the desire to master the innovative technologies and motivate students to innovate. Then we will get professionals with innovative dominant that become highly qualified personnel with innovative, forward-looking, progressive views, providing an innovative way of the economic growth both at national and regional levels.

Thus, human capital, as measured by educational achievement, appears to determine the pace of innovation of an economy. Formation of innovative development of regions demands the corresponding development of social relations and productive forces, in particular – human resources. The efficient economy organization determines the production of competitive products and the use of resource-saving technologies. Highly qualified specialists generate new ideas and implement them into practice.

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